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# Attachment 1

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Consumption and Forecast Projection of LDLP Products  
for Which Exclusion is Requested\*

PROJECTED CONSUMPTION

LDLP Products	1996		1997		1998		1999		2000		2001**		2002**		2003**		2004**		2005**	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
>=18" and <22" OD and >=0.750" WT																				
>=24" and <30" OD and >0.875" WT (grades A, B, and X-42); >0.750" WT (grades X-52 - X-56); and >0.688" WT (grades X-60 or greater)																				
>=30" and <36" OD and >1.250" WT (grades A, B, and X-42); >1.000" WT (grades X-52 - X-56); and >0.875" WT (grades X-60 or greater)																				
>=36" and <42" OD and >1.375" WT (grades A, B, and X-42); >1.250" WT (grades X-52 - X-56); and >1.125" WT (grades X-60 or greater)																				
>=42" and <64" OD and >1.500" WT (grades A, B, and X-42); >1.375" WT (grades X-52 - X-56); and >1.250" WT (grades X-60 or greater)																				
48" OD and >=1" WT (grades X-80 or greater)																				
>=64" regardless of grade or wall thickness***																				
<b>GRAND TOTAL</b>																				
											3.20%		3.20%		3.20%		3.20%		3.20%	

\*Consumption figures for 1996-2001 are based solely on the sales by Japanese producers in the U.S. While the Japanese respondents are aware that other foreign producers also sell these products in the U.S., they are not privy and cannot reliably their sales or total U.S. consumption.

\*\*Projected annual consumption figures provided for 2001-2005 is based upon government and industry reports as to forecasts for all line pipe products. See Attachment 2. Reliable projections for any particular LDLP specification are difficult as these products are mostly purchased for use in pipeline projects, which are intermittent by nature.

\*\*\*Due to computer data limitations, the quantities shipped in 1996-1997 and for >=64" regardless of grade or wall thickness may be underreported.

\*\*\*\*Though [ ] sales of 48" OD and >=1" WT (grades X-80 or greater) OR >=64" regardless of grade or wall thickness products are reported for 1996-2000, Japanese producers fully expect these products to be required in the marketplace in the near future due to the increasing physical requirements demanded of pipelines constructed in harsh environments.

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## Attachment 2

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Prepared for:

Arent Fox

September, 2001

## The US Large Diameter Line Pipe Market



Regarding Market Research On The:

### *Conditions and Factors Driving Demand for Large Diameter Line Pipe*

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## **Introduction**

Spears and Associates Inc., a Tulsa, Oklahoma-based petroleum industry market research and consulting company, was retained by Arent Fox to evaluate the US market for large diameter line pipe used in the transmission of oil and gas, with particular emphasis on the 1998-2002 timeframe, as part of an antidumping proceeding before the US International Trade Commission.

The information contained in this document has been compiled or arrived at by Spears and Associates from external sources and public documents believed to be reliable and in good faith, but no representation or warranty expressed or implied is made as to their accuracy or completeness.

John Spears  
President  
Spears and Associates

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Spears and Associates

## The US Large Diameter Line Pipe Market

The following section discusses US demand for large diameter line pipe (LDLP) over the 1998 to 2002 timeframe.

### Market Drivers

With over 210,000 miles of natural gas transmission pipeline and 175,000 miles of liquid trunklines currently in place, the US oil and natural gas transmission system is an established infrastructure that represents past demand for new pipeline construction, and continues to generate repair/maintenance demand for LDLP. Further expansion of the US pipeline grid - and thus demand for large diameter line pipe - is determined primarily by market expectations in the US oil and natural gas sector at large, including: growth in US oil and natural gas demand; utilization of the pipeline grid; and changes in the mix of supply sources.

### Oil and Natural Gas Demand

US natural gas demand is forecast to average 22.8 trillion cubic feet (tcf) this year, unchanged from last year. With US economic growth expected to improve in 2002, the EIA<sup>1</sup> expects that overall US natural gas demand will grow over 4% next year, reaching 23.8 tcf.

Long-term, demand for natural gas is expected to remain strong in the foreseeable future. The EIA currently projects that US natural gas demand will increase by 62% during 1999 to 2020, rising to 34.7 tcf. Natural gas demand for electricity generation, excluding cogeneration, is projected to triple over the period, as almost 90% of the generating capacity built over the next 20 years is expected to be natural gas-fired<sup>2</sup>.

Although the US economy has slowed in 2001, US oil demand is forecast to average 19.9 million bpd this year, up 1% from last year. With US economic growth expected to improve in 2002 and crude oil and refined product prices expected to continue to moderate, the US Energy Information Agency<sup>3</sup> expects that overall US oil demand will grow 2% next year, reaching 20.3 million bpd.

Longer-term, the EIA currently projects that US oil demand will grow at an average rate of 1.3% per year, reaching 25.8 million bpd in 2020 from 19.5 million bpd in 1999, an overall increase of 32%. Growth in US oil demand over the forecast period is led by the transportation sector, where efficiency improvements are more than offset by growing travel demand. Forecasts of

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<sup>1</sup> Short Term Energy Outlook, August 2001

<sup>2</sup> Oil and Gas Journal, December 4, 2000

<sup>3</sup> Short Term Energy Outlook, August 2001

substantial US oil demand growth have brought attention to the need to add significant refining capacity in the US.

At the same time that US oil and natural gas demand is expected to increase it is also shifting on a regional basis. The 2000 census found that most of the fastest-growing states were in the South and West, while most of the slowest-growing states were in the Midwest and Northeast. This population shift requires modification in the pipeline network to accommodate changes in oil and natural gas demand and pipeline utilization.

### Pipeline Utilization

The decade-long expansion of the US economy in the 1990s sustained continued growth in US oil demand which has resulted in record US oil consumption each year since 1998. Similarly, US natural gas consumption set an all-time record in 2000, totaling 22.8 tcf, up 5% from the prior year.

Prior to the recent record usage, US oil and natural gas consumption had peaked in 1978 and 1972, respectively. As a result, during the 1980s and most of the 1990s US oil and natural gas demand was well below levels that the pipeline delivery system had previously accommodated, minimizing the need to add new delivery capacity to the pipeline system. However, with both oil and natural gas demand now at historic levels there currently exists an interest in increasing pipeline capacity that was not generally present in prior years.

In the past year there have been urgent concerns over the need to get natural gas to market in light of the California power crisis and growing demand by gas-fired utility plants. "Electricity deregulation and continued brownouts and power shortages will require more power generation and better distribution of fuel with additional pipelines being a vital part of any new facilities"<sup>4</sup>.

There is growing concern that delay in expanding the natural gas transmission and delivery infrastructure could result in shortages of supply that may in turn disrupt regions or specific markets. In addition, a significant increase in oil refining capacity will require new pipelines to link to supply points and end-use markets. As a result, President Bush's Energy Plan specifically emphasizes the need to expand the US pipeline infrastructure. In part the Bush Energy Plan promises to streamline and expedite the FERC process for getting regulatory approvals for new pipeline projects and the new FERC has expressed strong commitment to pipeline expansion. In recent years regulatory review by federal, state, and local officials has acted as a significant brake on pipeline project timing, as "operators, in many cases, continue to wait on permits before making construction commitments."<sup>5</sup> It is anticipated that the Bush Energy Plan will

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<sup>4</sup> Pipe Line and Gas Journal, January 2001, pg. 35.

<sup>5</sup> Pipe Line and Gas Industry, January 2001, pg. 39.

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further enhance and speed up the time frame within which this new pipeline demand will be implemented through pipeline construction projects.

### Supply Sources

The identification and development of major new oil and natural gas supply sources requires modification of the configuration of the US pipeline network in order to deliver these supplies to refining/processing centers and end-use markets.

Virtually all natural gas consumed in the US is produced in North America. Although the US and Canada are mature producing areas, significant new natural gas supply sources continue to be identified and developed.

In the US, two areas with significant gas reserves which are experiencing increased field development activity are the Rocky Mountains and the Gulf of Mexico. In the Gulf of Mexico new technology has led to a boom in deepwater (over 1,500 feet water depth) exploration and development in recent years.

In the Rockies natural gas producers are also working hard to increase supply from new gas fields being developed in the region. Currently much of the focus in this region is on coalbed methane projects. Since 1999 an estimated 5,000 shallow coalbed methane gas wells have been drilled in Wyoming and New Mexico.

Other significant new natural gas sources that have been identified in recent years and which are in the process of being developed in part for the US market are in Canada. These include Alberta and northeastern British Columbia gas fields as well as Sable Island gas from offshore Nova Scotia.

The recent rise in natural gas prices has both prompted a sharp increase in drilling activity as well as illustrated the difficulty of rapidly increasing natural gas production from conventional US and Canadian supply sources such that operators have begun evaluating the requirements needed to develop unconventional resources such as the long-identified isolated natural gas reserves in the US North Slope of Alaska and the Mackenzie Delta region of Canada.

On the oil side, major new producing areas in North America include deepwater Gulf of Mexico and heavy oil reserves in Canada. Deepwater production now accounts for about 10% of US crude output, and is expected to continue to grow significantly in the near future. Operators in Canada have recently announced plans to add about 250,000 bpd of heavy oil production from Alberta and Saskatchewan in the near term. Analysts have estimated that some C\$25 billion of Canadian heavy oil projects could be undertaken over the long term.

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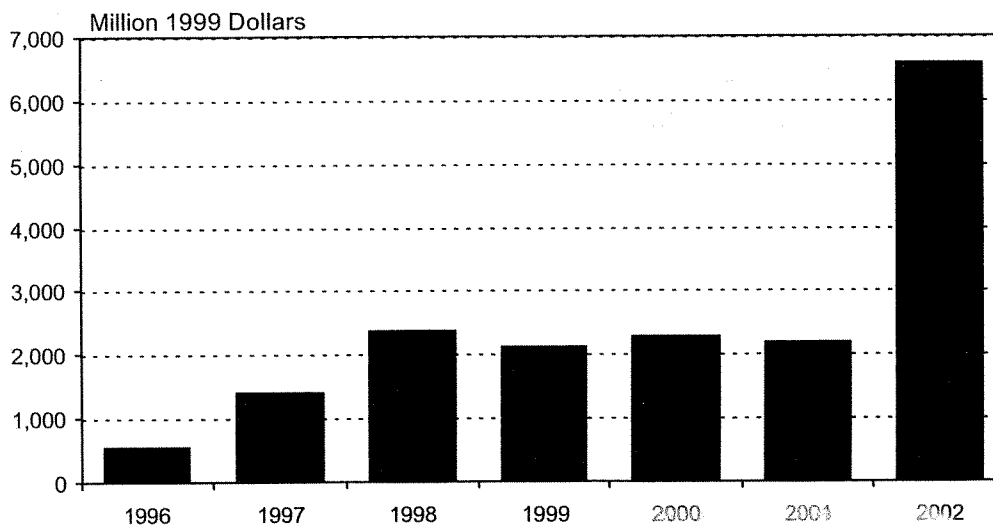
Despite the expansion of deepwater oil production, overall US oil output is forecast to decline in the future. With US oil consumption expected to increase, oil imports are forecast to rise sharply over time. The delivery of increased crude and refined product import volumes to the US will require expanding and upgrading the existing US liquid trunkline system to accommodate changes in the pattern of crude and product flow.

### Summary

Given the trends in petroleum consumption, utilization of the pipeline grid, and development of new oil and natural gas supplies, a number of sources agree that there is strong and growing demand to expand the US pipeline infrastructure.

The Interstate Natural Gas Association of America (INGAA) estimates that the US gas industry will need to invest \$34 billion in interstate pipeline and storage infrastructure between 1999 and 2010 to meet demand in the market. Similarly, the American Gas Association estimates that interstate gas pipeline construction expenditures will exceed \$50 billion over the next 20 years to meet a 60% increase in gas demand. In addition, the EIA estimates that expenditures for natural gas pipeline construction will triple from about \$2.1 billion in 2001 to \$6.4 billion in 2002<sup>6</sup>. See the following graph.

**Natural Gas Pipeline Construction  
Expenditures, 1996-2000, and  
Estimated Expenditures, 2001-2002**



<sup>6</sup> US Natural Gas Markets: Recent Trends and Prospects for the Future, May 2001

**US Pipeline Construction Activity**Profile

Onshore natural gas pipeline projects typically account for 60%-65% of total US transmission pipeline construction activity, with onshore liquid line construction representing 15%-20% of total activity and offshore work responsible for about 20% of total US pipelay mileage.

US large diameter pipeline construction activity is comprised of both a large number of relatively short (less than 50 miles) projects associated with connecting and upgrading the pipeline system and a small number of relatively long (100+ miles) construction projects linking new supplies into the pipeline/processing system. Long-length construction projects typically account for about 75% of the total US demand for large-diameter line pipe.

Oil and natural gas transmission pipeline construction is also very cyclical. A crucial factor affecting project timing is regulatory approval by federal, state, and local agencies. Other factors that affect project timing include weather, labor availability, transportation, material deliveries, and landowners.

US Market Review: 1998 to 2000

As shown by the following table, overall US transmission pipeline construction mileage (excluding natural gas distribution pipelay projects) trended down from 1998 to 2000. Some of the decline was a cyclical downturn following completion of several large-diameter, long-length onshore natural gas transmission projects early in the period – Vector, Alliance, Express, and Northern Border – that were associated with expanding the capacity to deliver Canadian natural gas.

Type	<b>US Pipeline Construction (mileage)</b>		
	1998	1999	2000
Gas Lines			
Transmission	3,943	3,633	2,976
Gathering	367	475	233
Total	4,310	4,108	3,209
Crude Lines			
Trunklines	656	424	473
Gathering	253	112	101
Total	909	536	574
Product Lines			
Refined Products	562	462	464
Oil, NGL	0	0	0
Total	562	462	464
Offshore			
Gas	886	856	645
Oil	510	347	287
Total	1,396	1,203	932
Total	7,177	6,309	5,179

Source: Pipe Line and Gas Industry

In the offshore sector much of the decline experienced in 2000 was attributable to the fall-off in Gulf of Mexico drilling activity seen during 1999 following the collapse of oil prices the previous year.

As illustrated by a previous chart, in 1999 and 2000 US pipeline construction expenditures were lower than the 1998 level. One factor that is believed to have slowed pipeline construction over this period is the consolidation of oil and gas production and transmission companies. In the upstream sector several "super-majors" have emerged in recent years by means of merger and acquisition. The sharp drop in oil prices in 1998 led to the merger of several large oil and gas operators as these firms sought to improve profitability through increased economies of scale. Some of the more significant mergers during this period included: Exxon-Mobil; BP-Amoco/Arco/Vastar; and Chevron-Texaco.

One effect of these mergers has been to delay implementation and planning of new exploration and development projects while the combined organization is put in place, personnel are reassigned, and the asset portfolio is reviewed. One effect of delayed field development has been to slow down work on construction of gathering lines. In the US, large diameter gathering lines are primarily found in the Gulf of Mexico. As each of the firms previously mentioned list holds significant acreage in the Gulf of Mexico, these mergers are believed to have played a role in the slowdown of offshore pipeline construction in the Gulf of Mexico that was reported in 2000.

The US oil and natural gas transmission pipeline system also has been an active arena for consolidation in recent years, as under-utilized pipeline systems are consolidated to achieve synergies and move towards full utilization. Some of the more significant mergers during this period included: Williams-Mapco; Lakehead-Enbridge; Entergy-Koch; and El Paso-Coastal. As in the upstream sector, consolidation in the pipeline sector often has a negative impact in the short run on capital spending. Some pipelines may be rendered surplus after consolidation, and may be sold. Preparing for a transfer of assets demands a major use of talent and resources, primarily to provide right-of-way, safety, and regulatory records to prospective buyers.

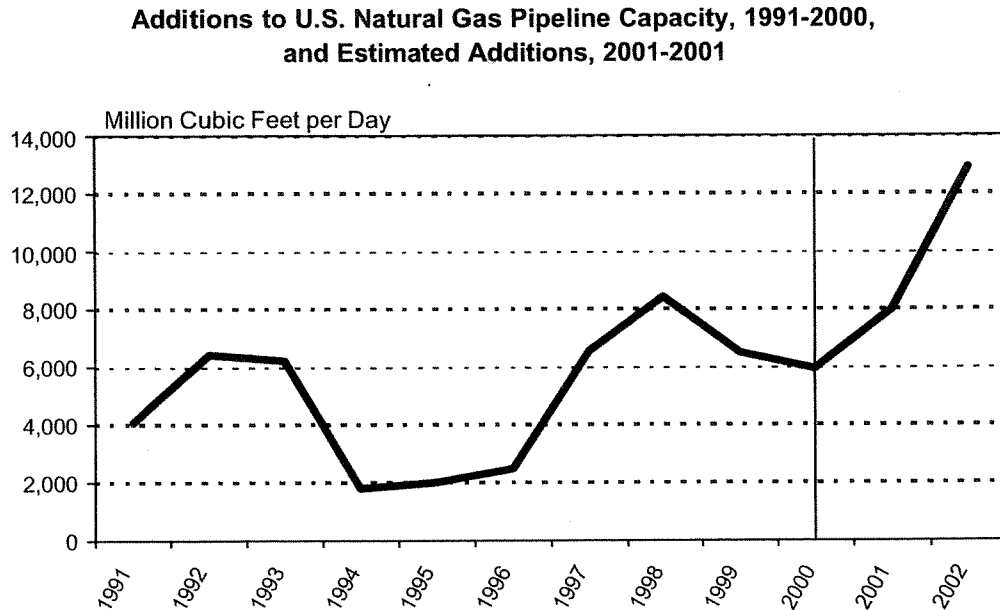
### Pipeline Construction Outlook

US transmission pipeline construction is poised to increase in 2001 and 2002. According to Pipe Line and Gas Industry, the U.S. is expected to see a total of 5,302 miles of pipeline construction in 2001, up from 5,179 miles in 2000<sup>7</sup>.

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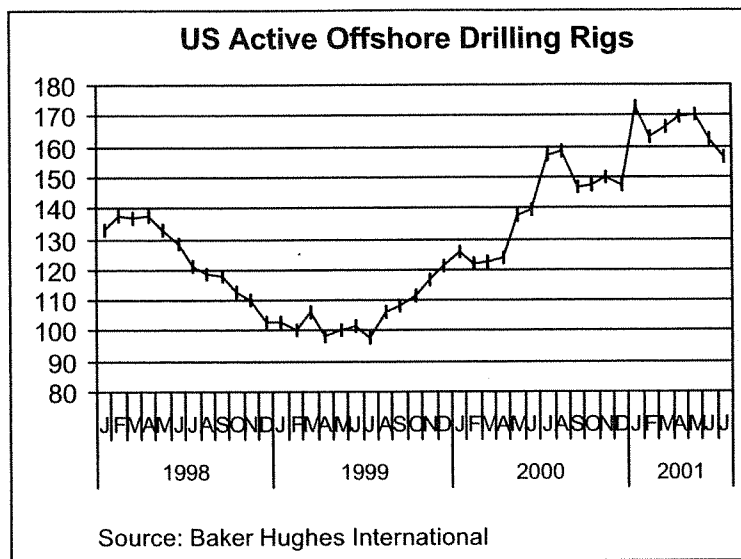
<sup>7</sup> January, 2001

Separately, the EIA has estimated that about 8.0 billion cubic feet per day (bcfd) and 13.0 bcfd of gas pipeline capacity will be added in 2001 and 2002, respectively, up from about 6.0 bcfd in 1999 and 2000<sup>8</sup>. See the following graph.

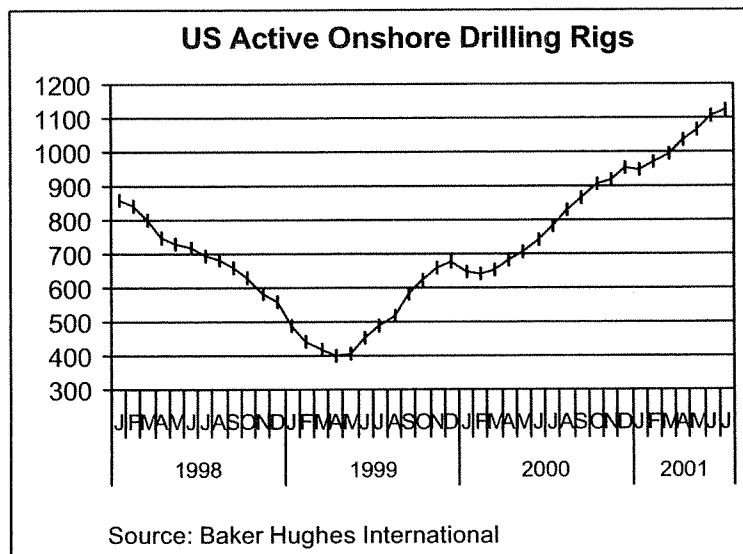


Offshore pipeline construction, which accounts for about 20% of the total, is poised to accelerate sharply in 2001. Over the past 18 months the number of US rigs drilling offshore has risen to its highest level since 1985 in response to high oil and natural gas prices. Both shallow-water and deepwater pipelay activity is expected to increase driven by the need to hook up new supply sources to the pipeline grid.

<sup>8</sup> "US Natural Gas Markets: Recent Trends and Prospects for the Future", May 2001

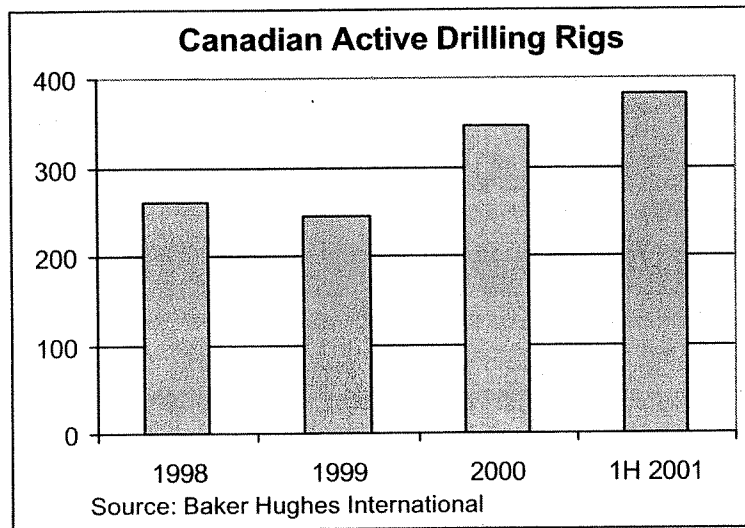


US onshore drilling has also risen strongly since crashing in 1998 and early 1999 as oil prices fell. About US 1,100 drilling rigs are currently working onshore. At this time approximately 75%-80% of US drilling activity is for natural gas.



One of the major areas for future US large diameter transmission pipeline construction projects is in the Rocky Mountains. In the Rockies natural gas transmission companies are working feverishly to expand pipeline facilities considered to be inadequate to handle the continuously increasing supply from new natural gas fields being developed in the region. According to the EIA: "Expanding coalbed methane production [from the Rocky Mountains region] has outpaced the development of long-haul capacity to carry the gas to end use markets."

Canadian drilling activity has also risen strongly since 1999 as operators have sought to increase natural gas deliverability to fill newly-built export pipelines to the US.



The following table identifies several proposed large-diameter liquid and natural gas pipeline construction projects in the US.

## Large Diameter Pipeline Construction Projects

Source: Pipe Line and Gas Industry, May 2001

Company	Project Location	Length miles	Pipe Diameter inches	Type	Status	Completion Date
Algonquin Gas	Massachusetts	29	16,24	Gas	Before FERC	2002
ANR	Illinois to Ohio	73	30,42	Gas	FERC approved	2002
ANR	Illinois to Ohio	3	42	Gas	Await start	2002
Blue Dolphin	Offshore	45	48	Oil	Planned	2004
BP Amoco	Offshore	216	16,24	Gas, Oil	Under study	2003
Chandaleur	Offshore	216	24	Gas	Planned	
Chevron	Offshore	45	30	Gas	Planned	
Cinergy	Ohio	17	30	Gas	Planned	2002
City Utilities	Missouri	4	14,16	Gas	Planned	2001
Centennial Pipe Line	Texas to Louisiana	70	24	Products	Working	2001
Coastal, Peoples	Lake Michigan	130	36	Gas	Planned	2002
Colonial	Alabama to Tenn.	171	20	Products	Planned	2001
Colorado Interstate	Colorado	18	20	Gas	Before FERC	2001
Colorado Interstate	Colorado	4	20	Gas	Before FERC	2001
Colorado Interstate	Kansas, Oklahoma	48	29	Gas	Before FERC	2001
Colorado Interstate	Wyoming, Colorado	155	36	Gas	Before FERC	2001
Colorado Interstate	Colorado	84	16	Gas	Before FERC	2002
Colorado Interstate	Colorado	42	24	Gas		
Colorado Interstate	Colorado	55	20	Gas		
Columbia Gulf	Tennessee	160	24	Gas	Planned	2001
Duke Energy	Virginia, NC	95	24	Gas	Planned	2002
Duke Energy	Virginia, Tenn.	82	12,20,24	Gas	Planned	2002
El Paso Energy	NM, Texas	185	24	Gas	Planned	2001
El Paso Energy	NY, PA, NJ	28	30	Gas	Before FERC	2001
El Paso Energy	GA, Florida	166	24	Gas	Planned	2003
Enbridge	Minn. To Wisconsin	120	36	Oil	Under study	
Enbridge	Offshore	275	36	Oil	Planned	2001
Equilon	New Mexico	94	16	Products	Planned	2001
Guardian Pipeline	Illinois to Wisconsin	149	16, 36	Gas	FERC approved	2002
Independence	Ohio to PA	370	36	Gas	FERC approved	2002
Iroquois Gas	New York	29	24	Gas	Planned	2001
KN Energy	Illinois	29	36	Gas	Planned	2002
Maritimes & Northeast	Massachusetts	25	30	Gas	Before FERC	2002
Millennium	New York	442	24, 36	Gas	Before FERC	2002
Kinder Morgan	Illinois to Missouri	47	24	Gas	Planned	2002
Northern Border	Illinois to Indiana	34	30	Gas	Working	2001
Northwest Natural Gas	Oregon	52	24	Gas	Planned	2004
Northwest Natural Gas	Oregon	32	24	Gas	Planned	2002
Northwest Natural Gas	Oregon	20	24	Gas	Planned	2004
Questar	Utah	75	24	Gas	Await start	2001
Raven Ridge	Wyoming, Colorado	128	16	CO2	Planned	
Trans-Union	Louisiana to Ark.	42	30	Gas	Working	2001
Williams	Marketlink	152	42, 36	Gas	FERC approved	2004
Williams	Sundance	38	42, 48	Gas	FERC approved	2002
Williams	Offshore	41	18	Gas	Await start	2001
Williams	Offshore	55	24	Gas	Planned	2001
Williams	Offshore	41	16	Oil	Planned	2001
Gulfstream	Offshore	753	16 to 36	Gas	FERC approved	2002
Williams	Washington	9	20	Gas	Before FERC	2002
Williams	Western Frontier	400		Gas	Planned	
Williams	Northwest			Gas	Planned	2003
Wisconsin Gas	Wisconsin	37	16, 24, 30	Gas	Planned	2002
Yukon Pacific	Alaska	880	42	Gas	Planned	

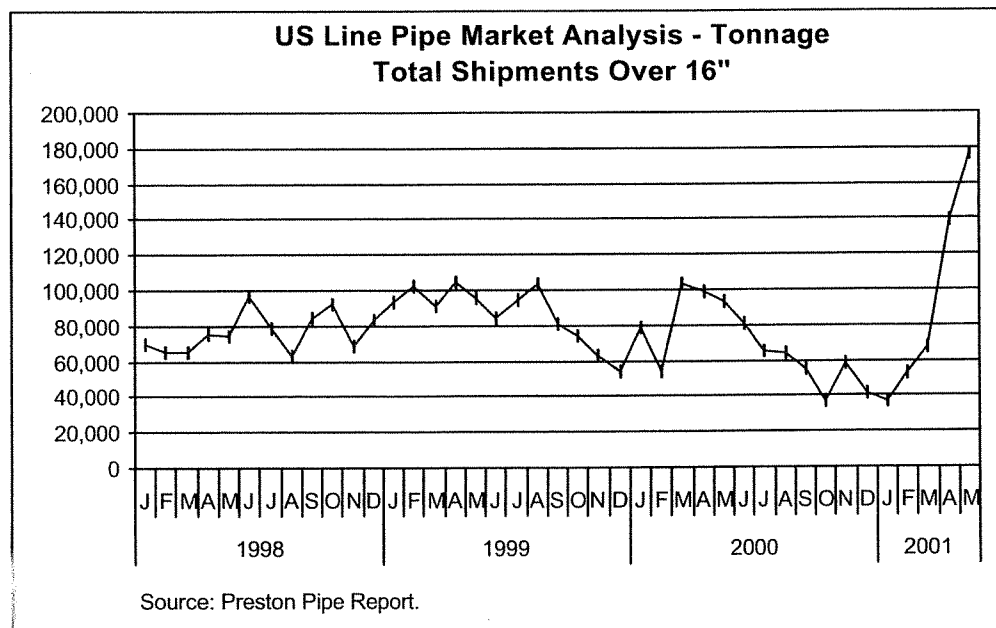
## Large Diameter Line Pipe Demand

US demand for large diameter line pipe (LDLP) products (i.e., over 16" in outer diameter) used in the transmission of oil and natural gas is largely associated with construction projects:

- Linking new supplies (oil or gas, domestic or imported) to the existing pipeline network or to processing facilities
- Connecting and upgrading the existing liquid and natural gas pipeline infrastructure

US LDLP demand is comprised of a large number of relatively short projects associated with connecting and upgrading the pipeline system and a small number of relatively long construction projects linking new supplies into the pipeline/processing system. Long-length construction projects account for the bulk of total demand for LDLP. Currently a number of these types of projects have been proposed, as shown on the previous project list.

Domestic and import LDLP shipments to the US market are reported to have totaled 0.92 million tons in 1998, 1.04 million tons in 1999, and 0.83 million tons last year<sup>9</sup>. After sliding in the latter half of 2000, LDLP shipments have accelerated in recent months due in part to deliveries associated with the 753 mile Gulfstream pipeline project in the Gulf of Mexico. As a result, LDLP shipments to the US market are estimated to total 1.50 million tons in 2001.



<sup>9</sup> Preston Pipe Report



It is anticipated that natural gas transmission pipeline construction projects will continue to represent about 80% of US LDLP demand in the future. Because the US LDLP market is primarily associated with natural gas transmission pipeline construction, estimates of the overall US LDLP market (total pipe used for both oil and gas pipeline construction) are driven by capacity additions to the US natural gas transmission system. It is assumed that the overall US LDLP market will require shipments of an average of 0.15 million tons of LDLP for each 1.0 bcfd added to US natural gas pipeline delivery capacity.

#### US Large Diameter Line Pipe Market

Year	Total Gas Demand tcf	Gas Pipeline Capacity Additions bcfd	LDLP Tons/ bcfd capacity addition millions	LDLP Shipments million tons
1998	21.26	8.5	0.11	0.92
1999	21.70	6.5	0.16	1.04
2000	22.78	6.0	0.14	0.83
2001	22.83	8.0	0.19	1.50
2002	23.81	13.0	0.15	1.95

Sources: Preston Pipe Report, EIA, Spears and Associates

Based on an EIA estimate that 13.0 bcfd will be added to US natural gas pipeline capacity in 2002<sup>10</sup>, LDLP shipments to the US market are estimated to total 1.95 million tons in 2002. This represents a 110% improvement over the average of 0.93 million tons of LDLP shipped per year during the 1998 to 2000 timeframe.

### Summary

There is a strong and growing demand to expand the US pipeline infrastructure, based on trends in oil and natural gas use, pipeline utilization, and the development of new oil and natural gas supplies in the US and Canada. The recent California power crisis and rapidly-growing demand by natural gas-fired utility plants have highlighted the urgency for additional natural gas transmission pipelines. Forecasts of substantial US oil demand growth have brought attention to the need to add significant refining capacity in the US, which will in turn need to be connected by pipeline to supply points and end-use markets. These trends are prompting changes in federal policy under the Bush Energy Plan that will expedite the approval process for new pipeline projects. As a result, a growing number of pipeline construction projects are planned and proposed. In addition, US and Canadian exploration and development drilling activity has increased sharply in response to high oil and natural gas prices. Accordingly, US LDLP shipments are forecast to increase from an average of 0.93 million tons of

<sup>10</sup> "US Natural Gas Markets: Recent Trends and Prospects for the Future", May 2001

LDLP per year during the 1998-2000 period to 1.50 million tons this year and 1.95 million tons in 2002.

## US Oil and Natural Gas Demand

The following section presents market conditions and factors driving US oil and natural gas demand over the 1998 to 2002 timeframe.

### Natural Gas Demand

A strong economy and the return of normal winter weather helped US natural gas consumption set an all-time record in 2000, totaling 22.8 trillion cubic feet (tcf), up 5% from the prior year. US natural gas demand had previously peaked in 1973 when it reached 22.0 trillion cubic feet tcf.

For much of the past decade a strong economy helped drive a sustained increase in US natural gas demand. Overall, natural gas consumption increased 22% from 1990 to 2000. Only very mild winters in 1997/1998 and 1998/1999 prompted a drop in overall gas demand in those years, causing an excess of natural gas in storage that in turn pushed natural gas prices lower.

Industrial requirements and residential consumption are the primary drivers of US natural gas demand. The industrial sector – which includes natural gas demand for non-utility generators (NUGs) - accounted for 42% of total US natural gas demand in 2000, while the residential sector represented 22% of US natural gas consumption last year. Commercial, electric utility and other sectors represent less important components of current US natural gas use, accounting for 15%, 13%, and 8% of total US natural gas demand in 2000, respectively. Industrial demand has grown in importance in terms of US natural gas demand, while electric utilities have fallen slightly in terms of their relative importance to the US natural gas market.

#### Industrial

Natural gas use by the US industrial sector increased 37% over the past decade. Natural gas accounted for about 45% of the primary energy used in the US industrial sector in 2000, up from 40% in 1990. Natural gas use as a percent of all primary energy used in the industrial sector has increased in part due to its preference as a fuel source by non-utility power generators.

#### Residential

Natural gas use by the US residential sector rose 13% over the past decade. Natural gas dominates as a fuel source in the residential sector, holding about 70% of the market. Residential natural gas demand growth is closely tied to population. Annual changes in residential natural gas demand are also affected by winter heating requirements.

## Commercial

Natural gas use by the US commercial sector increased 27% over the past decade. Natural gas accounted for about 80% of the primary energy used in the US commercial sector in 2000, up from about 72% in 1990. Commercial natural gas demand growth is closely tied to population growth and switching from oil as a fuel source. Annual changes in commercial natural gas demand are also affected by winter heating requirements.

## Electric Utilities

Natural gas use by the US electric utility sector rose 9% over the past decade. Natural gas has continued to account for only about 9% of the primary energy used in the US electric utility sector over the past decade, while coal and nuclear have remained the preferred fuel sources in this sector.

## Natural Gas Supply

Overall US natural gas production rose 7% over the past decade, from 17.8 tcf in 1990 to 19.1 tcf in 2000. US natural gas production rose rapidly from 1990 to 1994, as the US industry finally emerged from an extended period that was characterized as having surplus natural gas production capacity (the "gas bubble"). However, since 1994 US natural gas production has only increased 1%, in part due to the fact that the increased rate of depletion from existing wells has largely offset additional supplies coming onstream from new fields.

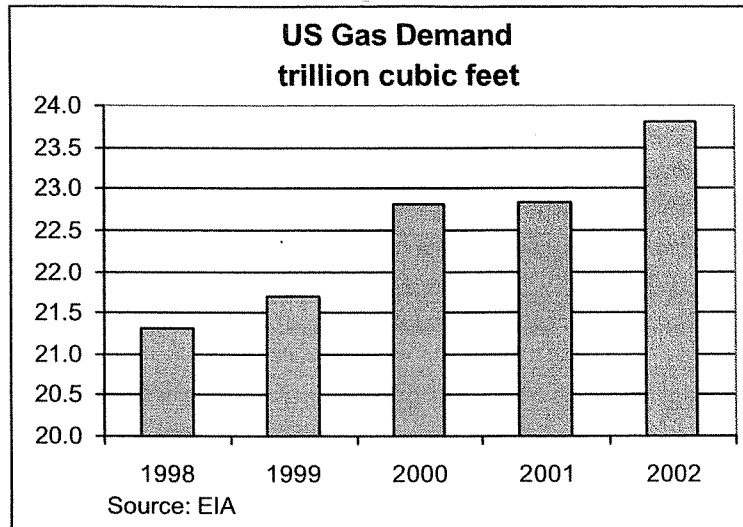
As a result, with US natural gas consumption rising faster than natural gas production, gas imports increased 147% during this period. Virtually all of these increased imports have come from Canada in the form of pipeline shipments.

## Outlook

Although the US economy has slowed in 2001, US natural gas demand is forecast to average 22.8 tcf this year, unchanged from last year. With US economic growth expected to improve in 2002, the EIA<sup>11</sup> expects that overall US natural gas demand will grow over 4% next year, reaching 23.8 tcf, another all-time record. 70% of the growth in overall US natural gas demand expected over the coming year is due to an increase of 7.5% in industrial natural gas use.

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<sup>11</sup> Short Term Energy Outlook, August 2001

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Long-term, demand for natural gas is expected to remain strong in the foreseeable future. The EIA currently projects that US natural gas demand will increase by 62% during 1999 to 2020, rising to 34.7 tcf. Natural gas demand for electricity generation, excluding cogeneration, is projected to triple over the period, as almost 90% of the generating capacity built over the next 20 years is expected to be natural gas-fired. Over the same period the EIA projects that US natural gas production will increase to 29.0 tcf in 2020, an average annual gain of 2.1% per year<sup>12</sup>.

### Oil Demand

The decade-long expansion of the US economy in the 1990s sustained continued growth in US oil demand which has resulted in record US oil consumption each year since 1998. Previously, US oil demand had peaked in 1978 when it reached 18.8 million bpd. Overall US oil demand average 19.7 million bpd in 2000, up 1% from the prior year.

Transportation requirements and industrial consumption are the primary drivers of US oil demand. The transportation sector accounted for 68% of total US oil demand in 2000, while the industrial sector represented 24% of US oil consumption last year. Residential, commercial, and utility sectors represent minor components of US oil use, accounting for only 4%, 2%, and 2.0% of total US oil demand in 2000, respectively.

<sup>12</sup> Oil and Gas Journal, December 4, 2000

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**PUBLIC VERSION****Transportation**

Oil remains the dominant fuel used by the US transportation sector, accounting for about 97% of all forms of energy used in this market over the past decade. Oil use in the transportation sector increased 20% over the past decade. The increased oil usage was the result of increases in travel demand - both the number of vehicles (up 12% from 1990 to 1999) and in the average number of miles driven per vehicle (up 10% from 1990 to 1999). Another factor contributing to the large increase in oil use in the transportation sector was the fact that over this period the improvement in the fuel efficiency of US vehicles slowed dramatically, rising only 2% from 1990 to 1999, to 16.8 miles per gallon. With little improvement taking place in fuel efficiency, the increase in the number of vehicles and the mileage per vehicle translated directly into an increase in fuel consumption during the period of inquiry.

**Industrial**

Oil use by the US industrial sector increased 10% over the past decade. Oil accounted for about 37% of the primary energy used in the US industrial sector in 2000. However, oil use as a percent of all primary energy used in the industrial sector has fallen slightly over the past decade, while natural gas has increased its importance as a fuel source in this market on the strength of its use among non-utility power generators.

**Electric Utilities**

Oil use by the US electric utility sector fell 38% over the past decade. Oil accounted for only about 2% of the primary energy used in the US electric utility sector in 2000. Indeed, oil use as a percent of all primary energy used in the electric utility sector has fallen over the past decade.

**Residential**

Oil use by the US residential sector rose 18% over the past decade. Oil accounted for about 21% of the primary energy used in the US residential sector in 2000. Oil use as a percent of all primary energy used in the residential sector has remained steady over the past decade.

**PUBLIC VERSION****Commercial**

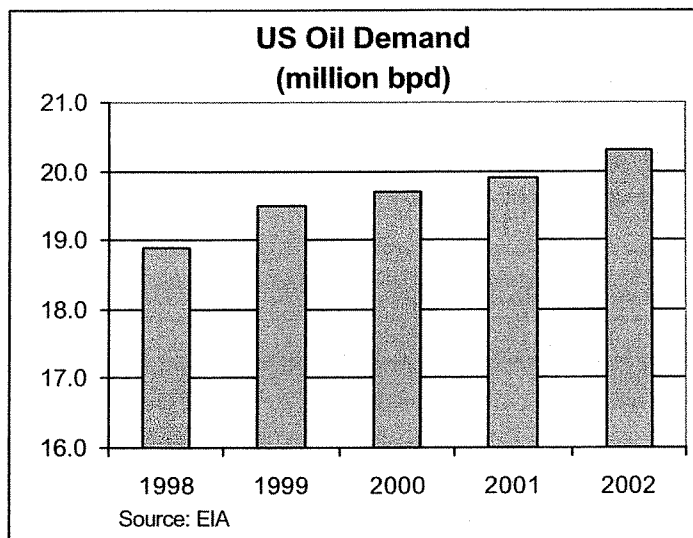
Oil use by the US commercial sector fell 20% over the past decade. Oil accounted for about 17% of the primary energy used in the US commercial sector in 2000.

**Oil Supply**

Overall US oil production fell 10% from 1990 to 2000, from 9.0 million bpd to 8.1 million bpd. Oil production from the lower-48 states declined 8% during this period, from 5.7 million bpd to 5.2 million bpd, while Alaskan oil output dropped 45%, from 1.8 million bpd in 1990 to 1.0 million bpd last year. In contrast, the production of natural gas liquids (NGLs) rose 23% during the past decade, from 1.55 million bpd to 1.9 million bpd. With US oil consumption rising and production falling, total oil imports increased 43% during the past decade, to 11.46 million bpd, according to EIA data.

**Outlook**

Although the US economy has slowed in 2001, US oil demand is forecast to average 19.9 million bpd this year, up 1% from last year. With US economic growth expected to improve in 2002 and crude oil and refined product prices expected to continue to moderate, the EIA<sup>13</sup> expects that overall US oil demand will grow 2% next year, reaching 20.3 million bpd.



Longer-term, the EIA currently projects that US oil demand will grow at an average rate of 1.3% per year, reaching 25.8 million bpd in 2020 from 19.5

<sup>13</sup> Short Term Energy Outlook, August 2001

million bpd in 1999, an overall increase of 32%. Growth in US oil demand over the forecast period is led by the transportation sector, where efficiency improvements are more than offset by growing travel demand.



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## Attachment 3

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October 29, 2001

Inv. No. TA-201-073

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**PUBLIC DOCUMENT**

**HAND DELIVERY**

The Honorable Donna R. Koehnke  
Secretary  
United States International Trade Commission  
Room 112A  
500 E Street, S.W.  
Washington, D.C. 20436

**Re: Certain Steel Products: Investigation No. TA-201-073**

Dear Secretary Koehnke:

On behalf of BP America, Inc. ("BP America"), we hereby submit an original and fourteen copies of BP America's remedy phase pre-hearing brief, in the above referenced matter. Copies of this submission are being served today on the counsel listed on the attached public certificate of service.

Respectfully Submitted,



Ritchie T. Thomas  
James V. Dick  
Anne K. Shukis  
Christopher H. Gordon

*Counsel for BP America, Inc.*

Enclosures

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While the resource base that supplies today's natural gas is vast, U.S. conventional production is projected to peak as early as 2015. Increasingly, the nation will have to rely on natural gas from unconventional resources, such as tight sands, deep formations, deep water, and gas hydrates. Also, many resources are in environmentally sensitive areas . . . .

Report on the National Energy Policy Development Group ("National Energy Policy") May 2001, at 5-3 to 5-6. See also Daniel Fisher, Going Deep, Forbes, Apr. 2, 2001 at 110, 112 (Ex. 3) ("By 2005 BP expects to pull 1.3 million barrels of oil and their equivalent of gas a day from fields lying in waters more than 1,000 feet deep . . . 25% of its worldwide production . . . .")

These harsh environments impose special demands on the steel pipe used in gathering, riser, and transmission lines. For example, BP's Mardi Gras project, construction of which is scheduled to start in 2002, will bring crude oil and gas from deep water, offshore fields located in the Southern Green Canyon area and the Mississippi Canyon area of the Gulf of Mexico.<sup>3</sup> These fields are located approximately 150 miles south of New Orleans, on the slope of the outer continental shelf. The Mardi Gras project will consist of four main pipelines: a crude pipeline and a gas pipeline originating in the Southern Green Canyon area; and a crude pipeline and a gas pipeline originating in the Mississippi Canyon area. These pipelines will originate at wells in water depths of 4,500 and 6,500 feet, respectively, where the water pressure will be as much as 187 atmospheres—more than one and a quarter tons per square inch.

These conditions and the demands of constructing pipelines at these depths require large diameter, unusually thick-walled, submerged arc welded (SAW) line pipe of high API grade (i.e., high strength) steel, with a very high degree of roundness. The design must be robust and the LDLP must be of the highest available strength, quality, and reliability in order to protect pipeline integrity and prevent catastrophic failure. The specifications for the Mardi Gras deep

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<sup>3</sup> The Mardi Gras pipelines are expected to move over 1 million barrels of petroleum per day.

## PUBLIC VERSION

water line (particularly wall thickness at the various diameters) are critical – there is no possibility of substitution, at any price, with LDLP that does not meet these specifications.

Although BP America intends to purchase from U.S. LDLP manufacturers those products they can manufacture, the vast majority of the LDLP required for the deep water sections of the Mardi Gras project is not manufactured by any pipe producer in the United States. In recognition of this fact, the petitioners in the pending welded LDLP antidumping investigations have modified the scope of those proceedings to exclude the pipe concerned. See, Certain Welded Large Diameter Line Pipe from Japan, 66 Fed. Reg. 47,142 (Dep't Commerce Sept. 11, 2001). Initial orders for LDLP for the Mardi Gras lines have been placed, in reliance on the exclusions from the antidumping proceedings, with initial shipments expected to arrive in January 2002, and additional shipments arriving in February through September 2002. Any restrictions or additional duties imposed on these shipments would cause serious difficulties for the project.

Another major pipeline project anticipated by BP America is the North American Natural Gas Pipeline, which would bring natural gas from the North Slope of Alaska to the lower 48 states. A study of the proposed line is to be completed in the fourth quarter of this year, and specifications for the pipeline are still being developed. However, this line, too, will require especially robust welded LDLP, in view of the arctic conditions that will be encountered for much of its length (steel tends to become brittle when subjected to extreme cold) and concerns for protection of the Arctic tundra and wildlife. It therefore is anticipated that substantial portions of this line will require SAW LDLP of specifications—likely API X80 grade or above, 48 inches to 52 inches in diameter, with wall thickness (WT) of 1.0 inches or greater—that lie well outside the range of the U.S. producers' facilities' ability to produce (but within the scope of this investigation). Recognizing this, the petitioners in the antidumping proceedings requested

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